

WHAT IS CLAIMED IS:

1. A probe for the treatment of glaucoma, comprising:
a probe tip configured to access the trabecular meshwork;
an aspiration port on said probe tip; and
a laser providing light energy to said probe tip sufficient to ablate said trabecular meshwork.
2. The probe of Claim 1, additionally comprising a handle supporting said probe tip, and wherein said laser is contained within said handle.
3. The probe of Claim 1, further comprising an irrigation port on said probe tip.
4. The probe of Claim 3, further comprising a lumen extending through said probe tip and terminating at said irrigation port.
5. The probe of Claim 1, further comprising a lumen extending through said probe tip and terminating at said aspiration port.
6. The probe of Claim 1, further comprising a combined irrigation and aspiration port on said probe tip.
7. The probe of Claim 6, further comprising a lumen extending through said probe tip and terminating at said combined irrigation and aspiration port.
8. The probe of Claim 1, further comprising an optical fiber for conducting said light energy from said laser to said probe tip.
9. The probe of Claim 8, wherein said optical fiber is a sapphire fiber.
10. The probe of Claim 8, wherein said optical fiber is a fused silica fiber.
11. The probe of Claim 1, additionally comprising a shield configured to protect Schlemm's canal from damage by said laser light energy.
12. The probe of Claim 11, wherein said shield and said laser are separated by an opening sufficient to accommodate said trabecular meshwork.
13. The probe of Claim 11, wherein said shield is sharp enough to penetrate said trabecular meshwork.
14. The probe of Claim 11 wherein said shield is sized to guide said probe tip along Schlemm's canal.

15. The probe of Claim 11, wherein said shield extends at a right angle from said probe tip.
16. The probe of Claim 15, wherein said shield lies on the axis of said laser.
17. The probe of Claim 1, wherein said laser comprises an Er:YAG laser.
18. The probe of Claim 1 wherein said probe tip is configured for goniotomy.
19. A probe for the treatment of glaucoma, comprising:
a probe tip configured to access the trabecular meshwork;
an aspiration port on said probe tip; and
a tissue ablator disposed on said probe tip and configured to ablate said trabecular meshwork.
20. The probe of Claim 19 wherein said probe tip is configured for schlemmectomy.
21. The probe of Claim 19 wherein said probe tip is configured for goniotomy.
22. The probe of Claim 19, further comprising an irrigation port on said probe tip.
23. The probe of Claim 22, further comprising a lumen extending through said probe tip and terminating at said irrigation port.
24. The probe of Claim 19, further comprising a lumen extending through said probe tip and terminating at said aspiration port.
25. The probe of Claim 19, further comprising a combined irrigation and aspiration port on said probe tip.
26. The probe of Claim 25, further comprising a lumen extending through said probe tip and terminating at said combined irrigation and aspiration port.
27. The probe of Claim 19, further comprising an electrical lead lumen extending through said probe, which runs between a distal port and a proximal port.
28. The probe of Claim 27, wherein electrical leads extend between said tissue ablator and said proximal port through said electrical lead lumen.
29. The probe of Claim 19, wherein said tissue ablator comprises a cautery element.
30. The probe of Claim 29, wherein said cautery element comprises a radio frequency (RF) electrode.

31. The probe of Claim 19, wherein said tissue ablator comprises an ultrasound transducer.

32. The probe of Claim 31 wherein said tissue ablator comprises an array of ultrasound transmissive panels.

33. The probe of Claim 19, wherein said tissue ablator comprises a piezoceramic ultrasound transducer.

34. The probe of Claim 19, wherein said tissue ablator comprises a piezoelectric transducer having at least a first electrode on an exposed outer surface of said transducer.

35. The probe of Claim 19, wherein said tissue ablator comprises a cryogenic element.

36. The probe of Claim 19, wherein said tissue ablator comprises a monopolar electrode system.

37. The probe of Claim 19, wherein said tissue ablator comprises a bipolar electrode system.

38. The probe of Claim 19, further comprising a power source.

39. The probe of Claim 38, wherein said power source is a current power source.

40. The probe of Claim 39, wherein said current power source provides radio frequency power.

41. The probe of Claim 38, wherein said power source provides ultrasonic energy.

42. The probe of Claim 38, wherein said power source provides sonic energy.

43. The probe of Claim 38, wherein said power source provides electrical power.

44. The probe of Claim 19, wherein a portion of the length of said probe tip is sized to fit within schlemm's canal.

45. The probe of Claim 19, wherein said probe tip is hook-shaped.

46. The probe of Claim 45, wherein said tissue ablator is at the bite of said hook-shaped probe tip.

47. The probe of Claim 19, wherein said probe tip is configured for goniotomy

48. The probe of Claim 19, wherein said probe tip is configured for schlemmectomy.

49. A method for treating glaucoma, comprising:

inserting a probe into an eye;
ablating a region of the trabecular meshwork of said eye with said probe;
aspirating said region of the trabecular meshwork of said eye with said probe;
and
removing said probe.

50. The method of Claim 49, further comprising irrigating said eye.

51. The method of Claim 49, wherein said region of the trabecular meshwork comprises at least half of said trabecular meshwork.

52. A method for treating glaucoma, comprising:
inserting a probe into an eye;
aspirating a region of the trabecular meshwork of said eye with said probe;
and
removing said probe.

53. The method of Claim 52, further comprising aspirating said region of the trabecular meshwork of said eye from said eye.

54. The method of Claim 53, wherein said region of the trabecular meshwork aspirated from said eye comprises at least 50% of said trabecular meshwork.

55. The method of Claim 53, further comprising irrigating said eye.

56. A probe for the treatment of glaucoma, comprising:
a probe tip configured to access the trabecular meshwork;
a tissue ablator disposed on said probe tip and configured to ablate said trabecular meshwork;
an aspiration port on said probe tip; and
a lumen extending through said probe tip and terminating at said aspiration port,
wherein said probe tip is configured for goniotomy.

57. The probe of Claim 56, wherein said tissue ablator is a cautery element.

58. The probe of Claim 56, wherein said tissue ablator is selected from the group consisting of a radio frequency (RF) electrode, ultrasound transducer, array of ultrasound transmissive panels, piezoceramic ultrasound transducer, and piezoelectric transducer.

59. The probe of Claim 56, further comprising an irrigation port on said probe tip.
60. The probe of Claim 59, further comprising an irrigation lumen extending through said probe tip and terminating at said irrigation port.
61. The probe of Claim 56, further comprising an electrical lead lumen extending through said probe, which runs between a distal port and a proximal port.
62. The probe of Claim 61, wherein electrical leads extend between said tissue ablator and said proximal port through said electrical lead lumen.
63. The probe of Claim 56, further comprising a power source.
64. The probe of Claim 63, wherein said power source is selected from the group consisting of radio frequency, ultrasonic, sonic, and electrical energy.
65. A probe for the treatment of glaucoma, comprising:
a probe tip configured to access the trabecular meshwork;
a tissue ablator disposed on said probe tip and configured to ablate said trabecular meshwork;
an aspiration port on said probe tip;
an aspiration lumen extending through said probe tip and terminating at said aspiration port,
wherein said probe tip is configured for schlemmectomy, said probe tip comprising two parallel arms, wherein a first arm is located directly above a second arm.
66. The probe of Claim 65, wherein said tissue ablator is disposed on the lower arm of said probe tip.
67. The probe tip of Claim 65, wherein said tissue ablator is a cautery element.
68. The probe tip of Claim 65, wherein said tissue ablator is selected from the group consisting of a radio frequency (RF) electrode, ultrasound transducer, array of ultrasound transmissive panels, piezoceramic ultrasound transducer, and piezoelectric transducer.
69. The probe of Claim 56, further comprising an irrigation port on said probe tip.
70. The probe of Claim 69, further comprising an irrigation lumen extending through said probe tip and terminating at said irrigation port.

71. The probe of Claim 56, further comprising an electrical lead lumen extending through said probe, which runs between a distal port and a proximal port.

72. The probe of Claim 71, wherein electrical leads extend between said tissue ablator and said proximal port through said electrical lead lumen.

73. The probe of Claim 56, further comprising a power source.

74. The probe of Claim 73, wherein said power source is selected from the group consisting of radio frequency, ultrasonic, sonic, and electrical energy.

75. A probe for the treatment of glaucoma, comprising:

a probe tip having a hollow chamber configured to access the trabecular meshwork;

a rotatable shaft disposed within said hollow chamber; and

a cutting head on the distal end of said rotatable shaft.

76. The probe of Claim 75, wherein said hollow chamber is in fluid communication with an irrigation supply.

77. The probe of Claim 75, further comprising an aspiration lumen extending through said probe tip.

78. A probe for the treatment of glaucoma, comprising:

a probe tip having a hollow chamber configured to access the trabecular meshwork;

a cutting sleeve disposed within said hollow chamber; and

a footplate formed at the distal end of said probe tip.

79. The probe of Claim 78, further comprising a cutting blade integrally formed at the distal end of said cutting sleeve.

80. The probe of Claim 78, wherein said cutting sleeve is hollow.

81. The probe of Claim 78, further comprising a combined irrigation and aspiration port.

82. The probe of Claim 81, wherein said hollow cutting sleeve forms an aspiration lumen, extending through said probe tip and terminating near said irrigation and aspiration port.

83. The probe of Claim 78, further comprising an irrigation lumen.

84. A method for treating glaucoma, comprising:
inserting a probe into an eye;
mechanically cutting a region of the trabecular meshwork of said eye with said probe;
aspirating said region of the trabecular meshwork with said probe; and
removing said probe.

85. The method of Claim 84, further comprising removing said region of the trabecular meshwork of said eye from said eye.

86. The method of Claim 84, further comprising irrigating said eye.

87. The method of Claim 85, wherein said region of the trabecular meshwork removed from said eye comprises at least 50% of said trabecular meshwork.